

6 multi-value keys being arranged to form part of the QWERTY configuration, the at least
7 nine multi-value keys further being arranged so as to emulate at least a portion of
8 telephone keypad arrangement.


1 31. The keyboard of claim 30, wherein the at least nine multi-value keys are
2 arranged in at least three rows, each row comprising at least three multi-value keys.

1 32. The keyboard of claim 31, wherein the at least three rows comprise:
2 a first row comprising multi-value keys associated with numeric values of 1, 2,
3 and 3;
4 a second row comprising multi-value keys associated with numeric values of 4,
5 5, and 6; and
6 a third row comprising multi-value keys associated with numeric values of 7, 8,
7 and 9.

1 33. The keyboard of claim 32, further comprising a tenth multi-value key
2 associated with at least a primary value and a numeric secondary value of 0, wherein
3 the tenth multi-value key is arranged in a fourth row.

1 34. The keyboard of claim 31, wherein the at least three rows comprise:

2 a first row comprising multi-value keys associated with at least three primary
3 values selected from the group consisting of Q, W, E, R, T, Y, U, I, O,
4 and P, and further associated with numeric values of 1, 2, and 3;
5 a second row comprising multi-value keys associated with at least three primary
6 values selected from the group consisting of A, S, D, F, G, H, J, K, L,
7 and ";", and further associated with numeric values of 4, 5, and 6; and
8 a third row comprising alphabetic/numeric multi-value keys associated with at
9 least three primary values selected from the group consisting of Z, X,
10 C, V, B, N, M, ",", and ".", and further associated with numeric values
11 of 7, 8, and 9.



1 35. The keyboard of claim 31, wherein the at least three rows comprise:
2 a top row comprising multi-value keys associated with numeric values of 1, 2,
3 and 3;
4 a middle row comprising multi-value keys associated with numeric values of 4,
5 5, and 6; and
6 a bottom row comprising multi-value keys associated with numeric values of 7,
7 8, and 9.

1 36. The keyboard of claim 31, wherein the plurality of keys further comprises at
2 least one additional multi-value key associated with at least a primary value and a

3 secondary value, the additional multi-value key being arranged to form part of the
4 QWERTY configuration, the at least one additional multi-value key further being
5 arranged in a fourth row, so that the at least nine multi-value keys and the at least one
6 additional multi-value keys collectively emulate a telephone keypad arrangement.

1 37. The keyboard of claim 36, wherein the at least one additional multi-value key
2 is associated with a numeric value of 0.

1 38. The keyboard of claim 31, wherein the plurality of keys further comprises at
2 least three additional multi-value keys, each associated with at least a primary value
3 and a secondary value, the at least three additional multi-value keys being arranged to
4 form part of the QWERTY configuration, the at least three additional multi-value keys
5 further being arranged in a fourth row, so that the at least nine multi-value keys and the
6 at least three additional multi-value keys collectively emulate a telephone keypad
7 arrangement.

1 39. The keyboard of claim 38, wherein the at least three rows comprise:
2 a first row comprising multi-value keys associated with numeric values of 1, 2,
3 and 3;
4 a second row comprising multi-value keys associated with numeric values of 4,
5 5, and 6; and

6 a third row comprising multi-value keys associated with numeric values of 7, 8,
7 and 9;

8 and wherein the fourth row comprises multi-value keys associated with
9 secondary values of *, 0 and #.

1 40. The keyboard of claim 38, wherein the at least three rows comprise:

2 a top row comprising multi-value keys associated with numeric values of 1, 2,
3 and 3;

4 a second row, below the top row, comprising multi-value keys associated with
5 numeric values of 4, 5, and 6; and

6 a third row, below the second row, comprising multi-value keys associated with
7 numeric values of 7, 8, and 9;

8 and wherein the fourth row, located below the third row, comprises multi-value
9 keys associated with secondary values of *, 0 and #.

1 41. The keyboard of claim 30, wherein the at least nine multi-value keys
2 comprise at least one selected from the group consisting of:

3 a key associated with a primary value of Y and a numeric value of 1;

4 a key associated with a primary value of U and a numeric value of 2;

5 a key associated with a primary value of I and a numeric value of 3;

6 a key associated with a primary value of H and a numeric value of 4;
7 a key associated with a primary value of J and a numeric value of 5;
8 a key associated with a primary value of K and a numeric value of 6;
9 a key associated with a primary value of B and a numeric value of 7;
10 a key associated with a primary value of N and a numeric value of 8; and
11 a key associated with a primary value of M and a numeric value of 9.

1 42. The keyboard of claim 41, further comprising a multi-value key associated
2 with at least a numeric value of 0.

1 ~~43.~~ In a handheld device that serves as both a data entry device and a wireless
2 telephone, a keyboard comprising:


3 a plurality of keys arranged in a QWERTY configuration;

4 wherein the plurality of keys comprises at least nine multi-value keys, each
5 associated with at least a primary value and a numeric secondary value, the at least nine
6 multi-value keys being arranged in at least three rows, each row comprising at least
7 three multi-value keys.

1 44. The keyboard of claim 43, wherein the plurality of keys further comprises at
2 least one additional multi-value key, associated with at least a primary value and a
3 secondary value, the at least one multi-value key being arranged in a fourth row.

1 45. The keyboard of claim 44, wherein the secondary value of the additional
2 multi-value key is 0.

1 46. The keyboard of claim 43, wherein the plurality of keys further comprises at
2 least three additional multi-value keys, each associated with at least a primary value
3 and a secondary value, the at least three multi-value keys being arranged in a fourth
4 row.



1 47. The keyboard of claim 46, wherein the secondary values of the at least three
2 additional multi-value keys are *, 0, and #.

1 48. The keyboard of claim 43, wherein each primary value comprises an
2 alphabetic value.

1 49. The keyboard of claim 43, wherein the plurality of keys arranged in the
2 QWERTY configuration further comprises at least one multi-value key associated with
3 at least a primary value and a non-alphabetic non-numeric secondary value.

1 50. The keyboard of claim 49, wherein the multi-value keys associated with
2 numeric secondary values are visually distinguishable from the at least one multi-value
3 key associated with a non-alphabetic non-numeric secondary value.

1 51. The keyboard of claim 50, further comprising a mark on each multi-value
2 key associated with a numeric secondary value.

1 52. The keyboard of claim 50, further comprising an arc-shaped mark on each
2 multi-value key associated with a numeric secondary value.

1 53. The keyboard of claim 50, further comprising a mark on each multi-value
2 key not associated with a numeric secondary value.

1 54. The keyboard of claim 50, further comprising a mark adjacent to each multi-
2 value key associated with a numeric secondary value.

1 55. The keyboard of claim 50, further comprising an arc-shaped mark adjacent to
2 each multi-value key associated with a numeric secondary value.

1 56. The keyboard of claim 50, further comprising a mark adjacent to each multi-
2 value key not associated with a numeric secondary value.

1 57. The keyboard of claim 50, further comprising a mark enclosing the set of
2 multi-value keys associated with numeric secondary values.

1 58. The keyboard of claim 50, further comprising a mark enclosing the set of at
2 least one multi-value key not associated with a numeric secondary value.

1 59. The keyboard of claim 49, wherein at least a portion of each multi-value key
2 associated with a numeric secondary value is a first color, and at least a portion of each
3 multi-value key associated with a non-alphabetic non-numeric secondary value is a
4 second color different from the first color.

1 60. The keyboard of claim 49, further comprising a first region having a first
2 background color and a second region having a second background color different from
3 the first background color, the first region comprising at least one multi-value key
4 associated with a numeric secondary value, the second region comprising at least one
multi-value key associated with a non-alphabetic non-numeric secondary value.

1 61. The keyboard of claim 60, wherein each multi-value key located within the
2 first region has the first background color, and each multi-value key located within the
3 second region has the second background color.

1 62. The keyboard of claim 49, wherein the multi-value keys associated with
2 numeric secondary values are tactilely distinguishable from the at least one multi-value
3 key associated with a non-alphabetic non-numeric secondary value.

1 63. The keyboard of claim 49, further comprising a tactile feature on each multi-
2 value key associated with a numeric secondary value.

1 64. The keyboard of claim 63, wherein each tactile feature comprises a bump.

1 65. The keyboard of claim 63, wherein each tactile feature comprises a ridge.

1 66. The keyboard of claim 63, wherein each tactile feature comprises a knob.

1 67. The keyboard of claim 49, further comprising a tactile feature adjacent to
2 each multi-value key associated with a numeric secondary value.

1 68. The keyboard of claim 67, wherein each tactile feature comprises a bump.

1 69. The keyboard of claim 67, wherein each tactile feature comprises a ridge.

1 70. The keyboard of claim 67, wherein each tactile feature comprises a knob.

1 71. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value is a first shape, and each multi-value key not associated with a numeric
3 value is a second shape different from the first shape.

1 72. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value comprises a first material, and each multi-value key not associated with
3 a numeric value comprises a second material different from the first material.

1 73. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value is backlit and each multi-value key not associated with a numeric value
3 is not backlit.

1 74. The keyboard of claim 49, wherein each multi-value key not associated with
2 a numeric value is backlit and each multi-value key associated with a numeric value is
3 not backlit.

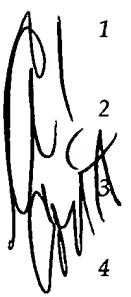
1 75. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value is backlit in a first color, and each multi-value key not associated with a
3 numeric value is backlit in a second color different from the first color.

1 76. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value is backlit at a first brightness level, and each multi-value key not
3 associated with a numeric value is backlit at a second brightness level different from the
4 first brightness level.

1 77. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value has a first level of translucency, and each multi-value key not associated
3 with a numeric value has a second level of translucency different from the first level of
4 translucency.

1 78. The keyboard of claim 49, wherein each multi-value key associated with a
2 numeric value has a first level of transparency, and each multi-value key not associated
3 with a numeric value has a second level of transparency different from the first level of
4 transparency.

1 79. The keyboard of claim 49, wherein the device issues an audible signal
2 responsive to a multi-value key associated with a numeric value being depressed, and
3 does not issue an audible signal responsive to a multi-value key not associated with a
4 numeric value being depressed.

 1 80. The keyboard of claim 49, wherein the device issues an audible signal
2 responsive to a multi-value key not associated with a numeric value being depressed,
3 and does not issue an audible signal responsive to a multi-value key associated with a
4 numeric value being depressed.

1 81. The keyboard of claim 49, wherein the device issues a first audible signal
2 responsive to a multi-value key associated with a numeric value being depressed, and
3 issues a second audible signal, different from the first audible signal, responsive to a
4 multi-value key not associated with a numeric value being depressed.

1 82. The keyboard of claim 49, further comprising:

2 for at least one multi-value key associated with a numeric secondary value, a
3 label identifying the secondary value, the label having a first color; and
4 for at least one multi-value key associated with a non-alphabetic non-numeric
5 secondary value, a label identifying the secondary value, the label
6 having a second color different from the first color.

1 83. The keyboard of claim 49, wherein at least one non-alphabetic non-numeric
2 secondary value comprises a punctuation mark.

1 84. The keyboard of claim 43, wherein the device further comprises a processor,
2 for interpreting user activation of a multi-value key as one of the values of the activated
3 multi-value key.

1 85. The keyboard of claim 43, wherein the device interprets user activation of a
2 multi-value key as one of the values of the activated multi-value key.


1 86. The keyboard of claim 43,
2 wherein the keyboard is adapted to detect key presses by a user; and
3 wherein, responsive to the keyboard detecting a key press of a multi-value key,
4 the device interprets the key press as one of the values of the pressed
5 key.

1 87. The keyboard of claim 86, further comprising:

2 a modifier key, for specifying which value of a multi-value key is intended.

1 88. The keyboard of claim 87, wherein, responsive to the keyboard detecting a
2 key press of the modifier key, the device interprets a subsequent key press of a multi-
3 value key as the secondary value of the pressed multi-value key.

1 89. The keyboard of claim 87, wherein, responsive to the keyboard detecting the
2 modifier key being held in a pressed position while a multi-value key is pressed, the
3 device interprets the key press of the multi-value key as the secondary value of the
4 pressed multi-value key.



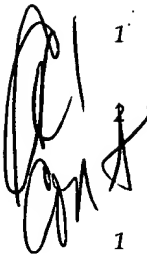
1 90. The keyboard of claim 87, wherein:
2 the keyboard has at least two modes, including a first mode in which the device
3 interprets a key press as the primary value of the pressed key, and a
4 second mode in which the device interprets a key press as the
5 secondary value of the pressed key, and
6 wherein, responsive to the keyboard detecting a key press of the modifier key,
7 the keyboard switches from one of the modes to another of the modes.

1 91. The keyboard of claim 43, wherein:
2 the keyboard has at least two modes, including a first mode in which the device
3 interprets a key press as the primary value of the pressed key, and a

4 second mode in which the device interprets a key press as the
5 secondary value of the pressed key.

1 92. The keyboard of claim 43, further comprising:
2 a modifier key, for specifying which value of a multi-value key is intended.

1 93. The keyboard of claim 43, wherein each key in the plurality of keys arranged
2 in a QWERTY configuration is associated with an alphabetic value and a secondary
3 value.

 1 94. The keyboard of claim 43, wherein the handheld device comprises an e-mail
2 device.

1 95. The keyboard of claim 43, wherein the handheld device comprises an e-mail
2 device adapted to operate in conjunction with a wireless network.

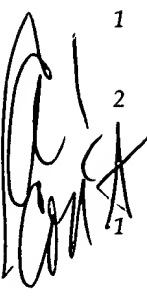
1 96. The keyboard of claim 43, wherein:
2 for each of at least a subset of the multi-value keys, the keyboard further
3 comprises a label identifying at least the primary value and the
4 numeric secondary value of the multi-value key.

1 97. The keyboard of claim 96, wherein each label is printed on the corresponding
2 key.

1 98. The keyboard of claim 96, wherein each label is printed adjacent to the
2 corresponding key.

1 99. The keyboard of claim 43, wherein the handheld device further comprises a
2 telephone dialing component, for, responsive to user activation of a sequence of keys
3 having numeric secondary values, dialing a telephone number specified by the key
4 sequence.

1 100. The keyboard of claim 43, wherein each key in the plurality of keys is tilted
2 at a substantially common angle.

 1 101. The keyboard of claim 43, wherein each key in the plurality of keys is oval
2 shaped.

1 102. The keyboard of claim 43, wherein the handheld device further serves as an
2 e-mail device.

1 103. The keyboard of claim 43, wherein the plurality of keys further comprises at
2 least one additional multi-value key, associated with a primary value and a secondary
3 value, the at least one additional multi-value key being arranged in a fourth row.

1 104. The keyboard of claim 43, wherein the plurality of keys further comprises at
2 least three additional multi-value keys, each associated with a primary value and a
3 secondary value, the at least three additional multi-value keys being arranged in a
4 fourth row.

1 ~~105.~~ In a handheld device that serves as both a data entry device and a wireless
2 telephone, a keyboard comprising:

3 a plurality of keys arranged in a QWERTY configuration;

4 wherein the plurality of keys comprises at least ten multi-value keys, each
5 associated with at least a primary value and a secondary value, the at least ten multi-
6 value keys being arranged in at least four rows, wherein at least three of the rows each
7 comprise at least three multi-value keys.

1 106. The keyboard of claim 105, wherein the plurality of keys arranged in the
2 QWERTY configuration further comprises at least one multi-value key associated with
3 at least a primary value and a non-alphabetic non-numeric secondary value.

1 107. The keyboard of claim 106, wherein the at least ten multi-value keys are
2 visually distinguishable from the at least one multi-value key associated with a non-
3 alphabetic non-numeric secondary value.

1 ~~108.~~ In a handheld device, a keyboard comprising:

2 a plurality of keys arranged in a QWERTY configuration;

3 wherein the plurality of keys comprises at least nine multi-value keys, each

4 associated with at least a primary value and a numeric secondary value, the at least nine

5 multi-value keys being arranged in:

6 a top row comprising multi-value keys associated with numeric values of 1, 2,

7 and 3;

8 a middle row comprising multi-value keys associated with numeric values of 4,

9 5, and 6; and

10 a bottom row comprising multi-value keys associated with numeric values of 7,

11 8, and 9.

1 ~~109.~~ A handheld device that serves as both a data entry device and a wireless
2 telephone, comprising:

3 a keyboard comprising a plurality of keys arranged in a QWERTY configuration,

4 the plurality of keys comprising at least nine multi-value keys, each

5 associated with at least an primary value and a numeric secondary

6 value, the at least nine multi-value keys being arranged in at least three

7 rows, each row comprising at least three multi-value keys; and

8 a processor, coupled to the keyboard, for processing user input received via the
9 keyboard.

1 110. The device of claim 109, further comprising:
2 a transceiver, coupled to the processor, for transmitting and receiving e-mail
3 messages.

1 111. The device of claim 109, further comprising:
2 a transceiver, coupled to the processor, for transmitting and receiving e-mail
3 messages via a wireless network.